

What Is Claimed is:

1. An isolated nucleic acid molecule selected from the group consisting of: (a) an isolated nucleic acid molecule that encodes the amino acid sequence of SEQ ID NO: 2, 4, 5, 7, 9, 11 or 13; (b) an isolated nucleic acid molecule that encodes a fragment of at least 6 amino acids of SEQ ID NO: 2, 4, 5, 7, 9, 11 or 13; (c) an isolated nucleic acid molecule which hybridizes to the complement of a nucleic acid molecule comprising SEQ ID NO: 1, 3, 6, 8, 10 or 12; (d) an isolated nucleic acid molecule which hybridizes to the complement of a nucleic acid molecule that encodes the amino acid sequence of SEQ ID NO: 2, 4, 5, 7, 9, 11 or 13; and (e) an isolated nucleic acid molecule that encodes a protein that exhibits at least about 35% amino acid sequence identity to SEQ ID NO: 2, 4, 5, 7, 9, 11 or 13.
2. An isolated nucleic acid molecule selected from the group consisting of: (a) an isolated nucleic acid molecule that encodes the amino acid sequence of SEQ ID NO: 2, 4, 5, 7, 9, 11 or 13; and (b) an isolated nucleic acid molecule that encodes the polypeptide of SEQ ID NO: 2, 4, 5, 7, 9, 11 or 13.
3. The isolated nucleic acid molecule of claim 1, wherein the nucleic acid molecule comprises nucleotides 25-429 of SEQ ID NO: 1.
4. The isolated nucleic acid molecule of claim 1, wherein the nucleic acid molecule consists of nucleotides 25-429 of SEQ ID NO: 1.
5. The isolated nucleic acid molecule of claim 1, wherein the nucleic acid molecule comprises nucleotides 25-432 of SEQ ID NO: 1.
6. The isolated nucleic acid molecule of claim 1, wherein the nucleic acid molecule comprises nucleotides 294-743 of SEQ ID NO: 3.
7. The isolated nucleic acid molecule of claim 1, wherein the nucleic acid molecule consists of nucleotides 294-743 of SEQ ID NO: 3.

8. The isolated nucleic acid molecule of claim 1, wherein the nucleic acid molecule comprises nucleotides 294-746 of SEQ ID NO: 3.

9. The isolated nucleic acid molecule of claim 1, wherein the nucleic acid molecule comprises nucleotides 1238-2215 of SEQ ID NO: 3.

10. The isolated nucleic acid molecule of claim 1, wherein the nucleic acid molecule consists of nucleotides 1238-2215 of SEQ ID NO: 3.

11. The isolated nucleic acid molecule of claim 1, wherein the nucleic acid molecule comprises nucleotides 1238-2218 of SEQ ID NO: 3.

12. The isolated nucleic acid molecule of claim 1, wherein the nucleic acid molecule comprises nucleotides 377-1948 of SEQ ID NO: 6.

13. The isolated nucleic acid molecule of claim 1, wherein the nucleic acid molecule consists of nucleotides 377-1948 of SEQ ID NO: 6.

14. The isolated nucleic acid molecule of claim 1, wherein the nucleic acid molecule comprises nucleotides 377-1951 of SEQ ID NO: 6.

15. The isolated nucleic acid molecule of claim 1, wherein the nucleic acid molecule comprises nucleotides 162-632 of SEQ ID NO: 8.

16. The isolated nucleic acid molecule of claim 1, wherein the nucleic acid molecule consists of nucleotides 162-632 of SEQ ID NO: 8.

17. The isolated nucleic acid molecule of claim 1, wherein the nucleic acid molecule comprises nucleotides 162-635 of SEQ ID NO: 8.

18. The isolated nucleic acid molecule of claim 1, wherein the nucleic acid molecule comprises nucleotides 373-648 of SEQ ID NO: 10.

19. The isolated nucleic acid molecule of claim 1, wherein the nucleic acid molecule consists of nucleotides 373-648 of SEQ ID NO: 10.

20. The isolated nucleic acid molecule of claim 1, wherein the nucleic acid molecule comprises nucleotides 373-651 of SEQ ID NO: 10.

21. The isolated nucleic acid molecule of claim 1, wherein the nucleic acid molecule consists of nucleotides 1-1662 of SEQ ID NO: 12.

22. The isolated nucleic acid molecule of claim 1, wherein the nucleic acid molecule comprises nucleotides 1-1662 of SEQ ID NO: 12.

23. The isolated nucleic acid molecule of any one of claims 1-22, wherein said nucleic acid molecule is operably linked to one or more expression control elements.

24. A vector comprising an isolated nucleic acid molecule of any one of claims 1-22.

25. A host cell transformed to contain the nucleic acid molecule of any one of claims 1-22.

26. A host cell comprising the vector of claim 24.

27. The host cell of claim 26, wherein said host is selected from the group consisting of prokaryotic host cells and eukaryotic host cells.

28. A method for producing a polypeptide comprising culturing a host cell transformed with the nucleic acid molecule of any one of claims 1-22 under conditions in which the protein encoded by said nucleic acid molecule is expressed.

29. The method of claim 28, wherein said host cell is selected from the group consisting of prokaryotic host cells and eukaryotic host cells.

30. An isolated polypeptide produced by the method of claim 28.

31. An isolated polypeptide or protein selected from the group consisting of an isolated
5 polypeptide comprising the amino acid sequence of SEQ ID NO: 2, 4, 5, 7, 9, 11 or 13, an
isolated polypeptide comprising a fragment of at least 6 amino acids of SEQ ID NO: 2, 4,
5, 7, 9, 11 or 13, an isolated polypeptide comprising conservative amino acid substitutions
of SEQ ID NO: 2, 4, 5, 7, 9, 11 or 13 or naturally occurring amino acid sequence variants
of SEQ ID NO: 2, 4, 5, 7, 9, 11 or 13, and an isolated polypeptide exhibiting at least about
10 35% amino acid sequence identity with SEQ ID NO: 2, 4, 5, 7, 9, 11 or 13.

32. An isolated polypeptide or protein selected from the group consisting of an isolated
polypeptide comprising the amino acid sequence of SEQ ID NO: 2, 4, 5, 7, 9, 11 and 13.

33. An isolated antibody that binds to a polypeptide of claim 30, 31 or 32.

34. An antibody of claim 33 wherein said antibody is a monoclonal or a polyclonal
antibody.

20 35. A method of identifying an agent which modulates the expression of a nucleic acid
encoding a protein of claim 31 or 32, comprising:
exposing cells which express the nucleic acid to the agent; and
determining whether the agent modulates expression of said nucleic acid, thereby
identifying an agent which modulates the expression of a nucleic acid encoding the
25 protein.

36. A method of identifying an agent which modulates at least one activity of a protein
of claim 31 or 32, comprising:
exposing cells which express the protein to the agent;
30 determining whether the agent modulates at least one activity of said protein,
thereby identifying an agent which modulates at least one activity of the protein.

37. The method of claim 36, wherein the agent modulates one activity of the protein.

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~~39~~ A method of identifying binding partners for a protein of claim 31 or 32,

comprising:

5 exposing said protein to a potential binding partner; and
determining if the potential binding partner binds to said protein, thereby
identifying binding partners for the protein.

39. A method of modulating the expression of a nucleic acid encoding a protein of
claim 31 or 32, comprising:

administering an effective amount of an agent which modulates the expression of a
nucleic acid encoding the protein.

40. A method of modulating at least one activity of a protein of claim 31 or 32,
comprising:

administering an effective amount of an agent which modulates at least one
activity of the protein.

41. A non-human transgenic animal modified to contain the nucleic acid molecule of
20 any of claims 1-22.

42. The transgenic animal of claim 41, wherein the nucleic acid molecule contains a
mutation that prevents expression of the encoded protein.

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~~26~~ 43. A method of diagnosing a disease state in a subject, comprising determining the
level of expression of a nucleic acid molecule or protein of any one of claims 1-22, 31 or
32.

44. The method of claim 43, wherein the disease state is allergic hypersensitivity.

45. The method of claim 43, wherein the disease state is seasonal rhinitis

46. The method of claim 43, wherein the disease state is asthma.

47. The method of claim 43, wherein the disease state is urticaria or atopic dermatitis.

5 48. The method of claim 43, wherein the disease state is mastocytosis.

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49. A composition comprising an isolated nucleic acid molecule of claim 1 or 2 and an aqueous carrier.

50. A method for the treatment or prevention of a disease state in a subject, comprising administering to said subject an effective amount of a nucleic acid molecule or protein of any one of claims 1-22, 31 or 32 or an agonist or antagonist thereof, thereby effecting said treatment or prevention of a disease state in said subject.

51. The method of claim 50, wherein the disease state is allergic hypersensitivity.

52. The method of claim 50, wherein the disease state is seasonal rhinitis.

53. The method of claim 50, wherein the disease state is asthma.

54. The method of claim 50, wherein the disease state is urticaria or atopic dermatitis.

55. The method of claim 50, wherein the disease state is mastocytosis.

56. A computer system comprising

(a) a database containing information identifying the expression level in a tissue or at least one mast cell of a set of nucleic acids comprising at least one nucleic acid sequence selected from the group consisting of SEQ ID NOs: 1, 3, 6, 8, 10 and 12 or a complement thereof; and

(b) a user interface to view the information.

57. A computer system comprising:

(a) a database containing information identifying the expression level in a tissue or at least one mast cell of a set of nucleic acids comprising at least one nucleic acid sequence encoding a protein selected from the group consisting of SEQ ID NOs: 2, 4, 5, 7, 9, 11 and 13 or a complement of said nucleic acid sequence; and

5 (b) a user interface to view the information.

~~48 A8~~ 58. The computer system of claim 56 or 57, wherein the database further comprises sequence information for said at least one nucleic acid sequence.

10005907-120701 59. The computer system of claim 56 or 57, wherein the database further comprises information identifying the expression level for said at least one nucleic acid sequence in at least one normal mast cell.

60. A computer system of claim 56 or 57, wherein the database further comprises information identifying the expression level of said at least one nucleic acid sequence in at least one mast cell from a patient with allergic hypersensitivity.

61. A computer system of claim 60, wherein the patient with allergic hypersensitivity has rhinitis, asthma or urticaria.

20 ~~48 A8~~ 62. A computer system of claim 56 or 57, further comprising records including descriptive information from an external database, which information correlates said genes to records in the external database.

25 63. A computer system of claim 62, wherein the external database is GenBank.

64. A method of using a computer system of claim 56 to present information identifying the expression level in a tissue or at least one mast cell of a set of nucleic acids comprising at least one nucleic acid sequence selected from the group consisting of SEQ ID NOs: 1, 3, 6, 8, 10 and 12 or a complement thereof, comprising comparing the expression level of at least one nucleic acid sequence selected from the group consisting of SEQ ID

NOs: 1, 3, 6, 8, 10 and 12 or a complement thereof in the tissue or at least one mast cell to the level of expression of the nucleic acid sequence in the database.

65. A method of using a computer system of claim 57 to present information
5 identifying the expression level in a tissue or at least one mast cell of a set of nucleic acids comprising at least one nucleic acid sequence encoding a protein selected from the group consisting of SEQ ID NOs: 2, 4, 5, 7, 9, 11 and 13 or a complement of said nucleic acid sequence, comprising comparing the expression level of at least one nucleic acid sequence encoding a protein selected from the group consisting of SEQ ID NOs: 2, 4, 5, 7, 9, 11 and 13 or a complement of said nucleic acid sequence in the tissue or at least one mast cell to the level of expression of the nucleic acid sequence in the database.

~~66. A method of claim 64 or 65, wherein the expression level of at least two nucleic acid sequences are compared.~~

67. A method of claim 66, wherein the expression level of at least five nucleic acid sequences are compared.

68. A method of claim 67, wherein the expression level of all the nucleic acid
20 sequences are compared.

69. A computer system comprising:
the nucleotide and/or amino acid sequence of at least one of SEQ ID NOs: 1-13
and a user interface to view the information.